

CASE STUDY

BIRDS AND AMPHIBIANS SUPPORT ON WET MEADOWS (CZECH REPUBLIC)

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1 Introduction: What is the case study about?

Two NGOs together with other stakeholders (including few farmers) restored irrigation system and recreated habitats on wet meadows for biodiversity improvement.

The project “Bird Park Josefovské louky” (Josefov Meadows) is located in the north-eastern part of the Czech Republic in Hradec Kralove region in arable land area and was founded in 2008. The aim was to create appropriate conditions for return of wetland birds and amphibians to the meadows in the floodplain of the river Metuje and to enable people to appreciate the beauty of nature - the motto is "Park for birds and for the people".

The idea was promoted by a local amateur ornithologist, who proposed restoration of one part of the original hundred years old unique irrigation system in some 70 ha grasslands located between Old and New Metuje river. The aim was to create a bird private reserve.

In the past, the floodplain of the whole river Metuje was often flooded and there was created a system of irrigation channels to support grassland production in dry seasons. The abandonment of irrigation system led to decline of waders in the locality. In terms of ornithology and botany, the site was not valuable at the beginning of the project (source: Czech Society for Ornithology). Decline of livestock production in 90s led to low demand for grass in the region, therefore farmers produce hay for unstable market, and without CAP support this activity would not be economically viable.

The project focuses on ESBOs: 1. restoration and increasing of biodiversity, joint with alluvial meadows and wetlands, especially wader birds and amphibians, and 2. educational benefits for public. As secondary effect, there is 3. benefit of cultural experience with restoration and using of former irrigation system, unique in the region.

But there is a dilemma: increase of biodiversity relying on increase of ground-water level and visits of tourists negatively influence conditions for farming. The restored irrigation system is in hands of NGO and not in hands of farmers, which cause uncertainty on the influence of irrigation to farming (e.g. farm operations).

Therefore, there is a problem of sustainability of water management and long term cooperation of project leaders with farmers, who manage the meadows. The farmers are motivated to manage grassland mainly by CAP payments (limited demand for hay). The project leaders (NGOs CSO and CSOP) indicated, that without CAP support, and farmers in area, they can imagine to manage the area themselves, but the improvements of the site would be much slower, and the sufficient fund rising much more difficult.

Actors and activities central for the case study

Czech Society for Ornithology (CSO) –NGO, leading and coordinating all the project activities, the owner of a part of the land.



The organization of the *Czech Union for Nature Conservation Jaro Jaroměř* (CSOP) – cooperates with the ornithologists closely from the beginning, now it focuses especially on the technical side (e.g. mowing grassland and constructing pools), does monitoring of biodiversity (plants, amphibians) and publishes popular articles about progress in the project for the local press.

Municipal office Jaroměř (Environment Department) - addresses administrative procedures around the handling of water and any complaints.

Donors and volunteers - are essential especially for land purchase and some work activities.

Farmers – they are tenants of the most of grassland, partly also land owners, they do grassland management, sometimes also on the land owned by the ornithologists, and some of them help the ornithologists to communicate with the land owners (source: the farmers).

Hunters – they exercising the right of hunting on leased hunting area, feeding birds during the winter, one of them is an owner of the land.

Owners of small hydro power plants in the Old Metuje river- the same interest as ornithologists- water in the river, they partly compete for water with the project in a dry season.

CSO is the *leader of the project* and cooperates closely with the NGO Jaro-Jaroměř. They created board which took the key decisions, but the board does not have a legal status.

In cooperation with the town administration CSO got permits of water use/management and the document with rules of water management was drafted and approved (e.g. amount of water to be used for irrigation, timing of irrigation) (source: Municipality Jaroměř). CSO started to discuss with farmers the grassland management, and soon they decided to buy the land from owners, who rent the land to farmers. For this purpose, the CSO carries out public collection from donors, at the beginning mostly members of Czech Birdlife. Other activities (e.g. creation of small ponds for amphibians and waders) were financed from public funds (source: CSO). The land purchase has been necessary to get property rights to influence effectively the water and grassland management and to build pools and lightweight structures such as bird observatory. CSO owns 24 ha (32 % of the site) (source: CSO).



Table 1: Key features of Bird park project

Region or locality	Lowland area, mostly arable, the Bird park is wet meadows area
Main Farming/ forestry system	Grassland for hay production, only partly commercial, managed with support of CAP.
Area (ha) of initiative (& Case Study)	Bird park project area is 70 ha
Key ESBOs covered	Biodiversity, cultural values, water management.
Total no. of farmers/ foresters involved	Six farmers, all have some connection with the initiative, most of them have much more land outside the Bird park.
Other key stakeholders involved	Two national NGOs as main project leaders; one community fully involved; support from key government agencies; involvement of small water power plant owner; hunters; donors and volunteers involved.
Source(s) of funding	Using of public investment through Ministry of Environment, important input through ‘in-kind’ contributions (volunteers) and financial donors.
Start date of initiative	Bird park has started in 2008.
End date of initiative	Ongoing.



2 Definition of the social-ecological system (SES) studied

2.1 Figure of the SES, using the revised SES Framework

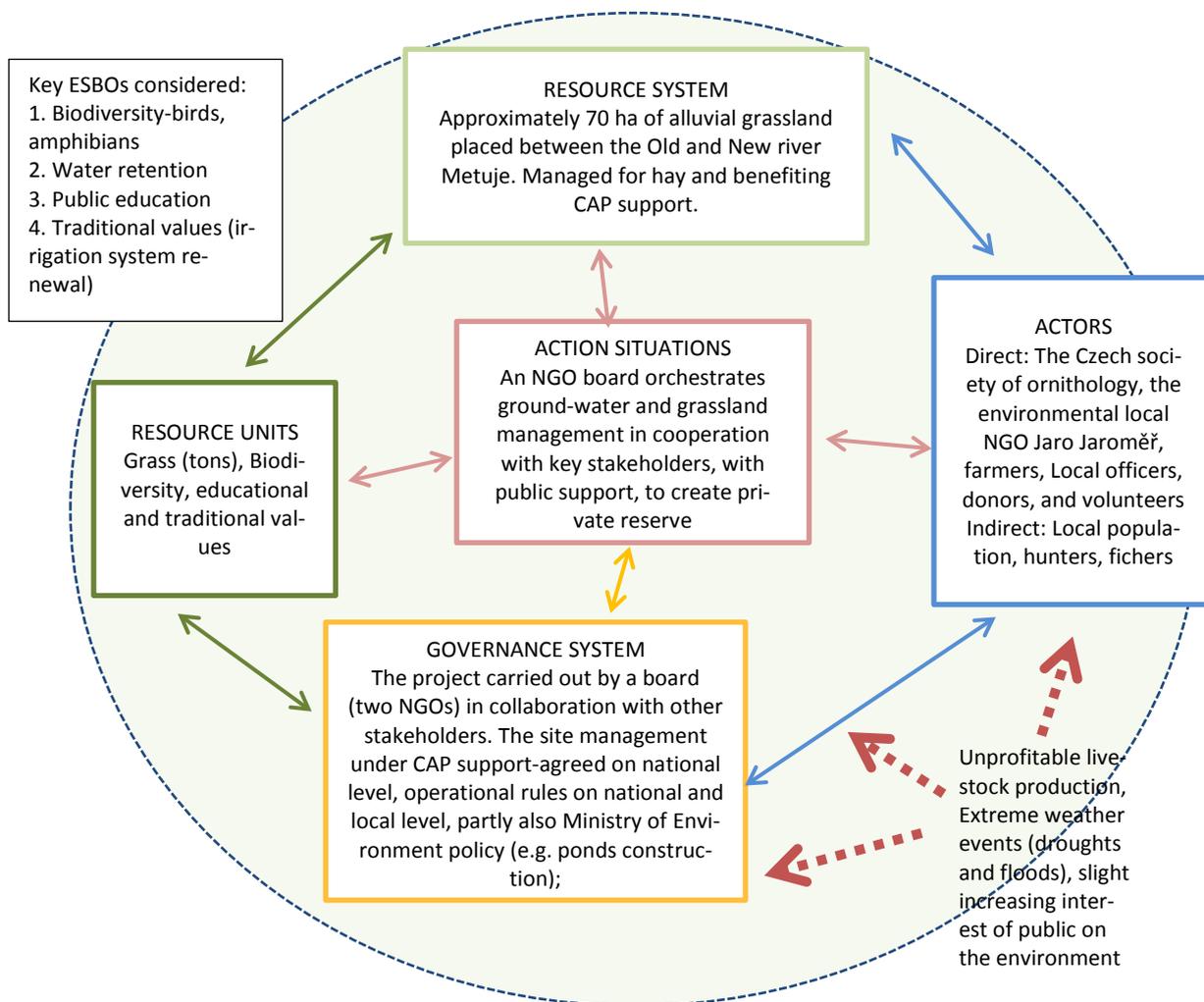


Figure 1:
Summary of the SES framework for case study
(adapted from Ostrom and Cox 2010; McGinniss and Ostrom 2014)

2.2 Description of the SES

In order to reach the goal – to create a private bird reserve with increasing numbers of waders and amphibians - it was necessary to agree on change in management of the area with several stakeholders. The key points of change were restoration of the irrigation system for manipulation with ground water level, creation of small pools/ponds, and adjustment of grassland management in favor of birds/waders. The project required renewal of facilities for water management (for bringing water to ditches in meadows from the river Metuje), getting the permit for use and manipulation with water from the town administration and an agreement on the water management rules. It was agreed to bring water to the meadows three times during a year and the timing should not prevent farmers from making hay and usual operations on meadows. It was necessary to agree with all key stakeholders on future cooperation

and with farmers on timing of hay cut, which is more favorable for birds. The project leaders (CSO/CSOP) focused on recreation of the habitat favorable for birds and attract local/regional community to the site with purpose of education on biodiversity and the importance of water management in the landscape.

Production system and production units:

The key production system is grassland, where hay is produced as a unit of production. The total area is about 70 hectares of which 55.8 ha are in LPIS (eligible for CAP payments). The area outside LPIS is partly non-regularly cut by NGOs and partly is left to the natural succession; it is planned for future creation of ponds and other facilities. The meadows were originally wet (natural course and floods of Old Metuje river), but after the creation of second course/branch of the river, the water was lost. In response to that, the Water cooperative in past created irrigation system for these meadows, and the system was abandoned during communist time. Meadows/plant communities adapted to decades without irrigation. When irrigated, there is higher potential for production (three cuts a year). But the current demand for hay is low, because of decline in beef numbers in the region during 90s, joint with the end of the state-governed agriculture, and transformation of the grassland managers (from state/cooperative farms into private farms). In addition high soil fertility in the region and high and rather stable prices of the plant commodities have made animal production less attractive in this region. Therefore, the hay is sold to horse keepers, zoological gardens, and other small clients. Because there is no motivation for production of large amount of hay, the meadows management is quite extensive and using low inputs. There are six active farmers but only two of them have more than 10 hectares of land there. Some stakeholders assume the quality of hay will change (probably decline) after some years of using irrigation as a result of changes in plant communities.

Governance system

Management of the great part of the grasslands (nearly 80 %) is supported by CAP (Direct Payments, Agri-environmental-climatic Measure – next AECM) and it is major motivation for continuation of grassland management (also responsibility to owners to some extent). Policies are decided on national level. Investments (e.g. pools creation) were supported under policies of Ministry of Environment.

There is rather informal governance on the project level. Two NGOs created informal board or as the NGOs call that “working group”, which coordinates the action situation and makes key decisions concerning development of the whole project and major activities (such as creation of pools on the meadows). Representatives of CSO and CSOP meet personally twice a year and communicate mainly by emails in the meantime.



Actors (partly described under section 1)

The NGOs CSO and CSOP (Jaro-Jaroměř) are interested in the growth of biodiversity, restoration of the area with increasing water capacity (retaining water in the landscape) including renewal of irrigation system (representing traditional value), and educating public (including children) on the biodiversity and landscape management. Therefore, they initiated the project and coordinate all key activities and the cooperation with other stakeholders (source: CSO, CSOP). They are enthusiasts and their reward is mainly in satisfaction from improvement of biodiversity and other benefits of the project.

Interest of *the farmers* was to manage the site while receiving CAP support (especially Direct Payments and partly AECM), and to some extent to sell some hay (some farmers use the hay for hobby horses), but the motivation is to produce it as cheaply/as easily as possible, because of low demand for this commodity and nearly no animals to feed in the region (intensification was not an option). But the restoration of the irrigation system and bringing water to meadows three times a year created uncertainties and some management difficulties to farmers (e.g. rise of ground water level could threat hay production). In addition, farmers were asked to change some of their management practices by the board (e.g. to cut parts of meadows in two different dates).

Interest of *the public and donors* in the project is growing because of intensive work of board of CSO a CSOP. There are several visits and public days organized every year and the Bird Park got quite good publicity between local/regional inhabitants. The donors are regularly informed by e-mail on the improvements reached with the support they provided.

The town officials were involved from the very beginning of the project especially in the preparation of the water management plan and the approval of the water use for CSO.

The small power plant owner shares interest in enough water in the river with the CSO and share part of facilities on river for water management. Their interest is mirrored in the rules defined for the water management.

Action situation

The NGO board orchestrates ground-water and grassland management in cooperation with the key stakeholders and with the public support to create and to maintain (and improve the state of) the private bird reserve. The board (both the NGOs) agreed water regime with the municipality officials and the farmers, and this is mirrored in the formal document, regulating water management. The project manager (employed by the CSO) communicates with the farmers and the small water power plant owner over the actual dates of the water use (releasing it to the irrigation channels) and agrees with the farmers adjustments to the grassland management (e.g. later cut). To have funds for the land ownership, the CSO runs a fund, which collects financial support from general public (public collection). For creation of small facilities in project area (e.g. a bird observatory, small pools) the CSO applies for the public support (the financial tools of the Ministry of Environment). With the aim of increasing public awareness the CSO organizes public days with guided tours in the site for the local school children and other interested groups, which have become quite popular in the region. All activities aiming at increase of biodiversity and at rising awareness of public on biodiversity are carried out mainly by the CSO or board of the CSO and CSOP while attracting public, farmers, power plants owners, municipality and other stakeholders to cooperation. The board is involved in



conflicts resolution. The weak point is the present cooperation of farmers, because some of them do not accept the activities of the CSO/CSOP fully and do not support the project sufficiently.

Changes in SES over time

There have been few major changes over time in socio-ecological system. The most significant change has been in property rights, because the CSO now owns about 32% of agricultural land in the locality. This is strategic step done by the CSO to increase the control over the land use and they plan to carry out additional purchase. The changes are seen also in the bird and amphibian biodiversity provision (increase) and there are expected changes in plant community structure.

Details of the SES description are in Camska et al., 2016.

2.3 Levels of ESBO provision, trends, and determinants

The meadows were at the beginning of the project rather poor in sense of biodiversity because of lack of water and partly lack of management (source: CSO). Memory of inhabitants says that there were several species of waders during time of regular irrigation.

After the irrigation restoration and the grassland and water management changes the numbers of target species increased significantly (see figure 1 and table 1 below). The appreciation of these public goods is quite high in the local/regional community. The CSO supports that on several events in which up to 100 visitors participate on each (the source: CSO). These are guided tours, and public days, or school visits (pupils are invited especially during the spring time).

The biodiversity increased significantly after the introduction of the project and investment in irrigation system and pools with shallow water.

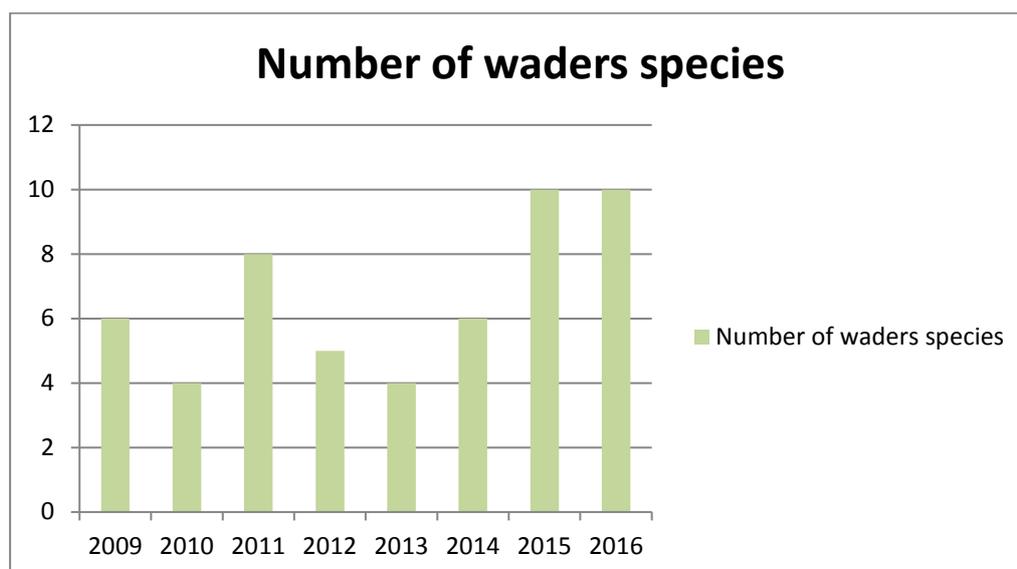


Figure 2: Numbers of bird/waders species observed on the site

Source: data CSO 2017 (not published)

Table 2: Numbers of amphibians observed on the site

Amphibians - numbers	2009	2016
Marsh frog (estimates)	10	400
Crested Newt	5	150
Number of species	4	7

Source: data CSO 2017 (not published)

The development of biodiversity proved that the level of provision of ESBO is high and increasing. The increase of species of waders is apparent from Figure 1 and rising of amphibian's numbers is shown in Table 1.

One of the ESBOs is the educational value of the site for inhabitants and young people. The public interest could be shown on the development of organised visits for group of interested people from region. The development of events numbers is shown in Figure 2 and number of visitors in Table 2 below.

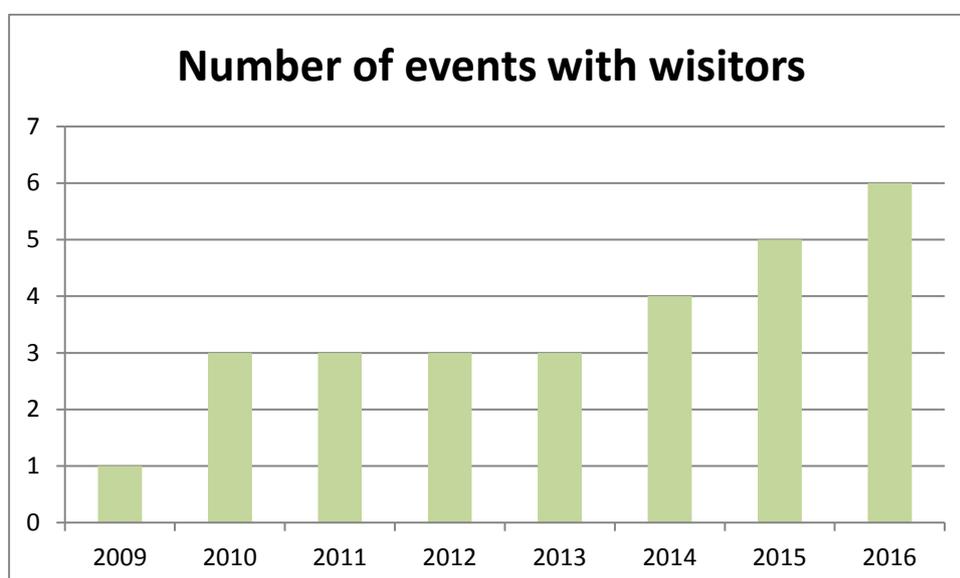


Figure 3: Development of events number for public visitors

Source: data CSO (2017), (not published)

Table 3: Number of scholar visitors of the Bird park

Year	Number of scholar visitors
2013	462
2014	360
2015	477

Source: CSO (2017) (not published)

The demand for the ESBO in the region could be assessed by interest to visit the site. It is growing and the limiting factors for the numbers of visitors is the carrying capacity of the site, the size of the site, and the capacity of the NGOs to provide guides to the groups of visitors

(source: workshop with stakeholders, CSO). The numbers of visitors presented in Table 2 represent visits in groups which are guided on the site. Number of individual visitors has not been recorded. CSO still considers adding some events for visitors, but the capacity of the site and CSO to organise such events is close to its limits (some events attended over 100 visitors). The educational, traditional, and biodiversity value is partly expressed in a small fee collected from school's visitors to cover the costs of the guide.

The key determinant of improvement in ESBO provision is the enthusiasm of the local ornithologists and relevant NGOs (CSO and CSOP), who put a lot of effort to the Bird Park creation, and their ability to convince donors to support the project. At the same time building of pools and the increase of ground water level and thus renewal of the irrigation supported the increase of species/numbers of waders and amphibians. The capacities of NGOs to communicate with local stakeholders and staff of municipality administration were preconditions of irrigation renewal, purchase of land for capital works, and some degree of agreement with farmers on grassland management. But some farmers did not accept the project idea and do not cooperate with project leaders. The NGO representatives even believe that one of the farmers tries to buy land in the area to prevent some activities in the Bird Park, but there is not clear evidence of that (source: CSO representative). Therefore, one of the limiting factors is the lack of cooperation with farmers, who do not share the enthusiasm for the project benefits (source: results of interviews and workshops).

The key institutional change was getting permits of using water for irrigation and agreement on the rules of water use with official of municipality and with other stakeholders including farmers. Another important institutional change was creation of reputation and trust as project leaders who have capacity to provide new and more ESBOs in the area (that attracted donors and volunteers supporting park creation).

The project of the Bird park did not cause great changes in the farming practice. The farmers can use the same machinery as before, but they have to adapt the cutting time. They feel that the grassland management is more time and work consuming. They expressed also some uncertainty about expected changes in the land lease from the CSO (both availability and costs) and grass/hay quality (source: interviews). They do benefit from the CAP, and partly AECM (not all of them, the barrier is mostly short-time land leasing agreements). Moreover, the CSO is still considered to be a strange element in the region and the farmers are sometime not presented by the CSO/CSOP as partners (e.g. in the public days). There are also some disagreements about what and how to protect between the CSO and the local hunters (often farmers in the same person). But the farmers are important for ESBO production. But the low trust partly reflects general low trust in the Czech Republic and low trust between farmers and people in nature protection (Uslander 2003, Frane 2003, Prazan 2014).

2.4 Ancillary economic and social benefits provided 'on the back' of ESBOs

It is important to mention that the project covers relatively small area (about 70 hectares), therefore its capacity to attract a lot of interested people to visit the site is limited. In addition, the project leaders plan to divide the project area into two zones, of which one should be closed for visitors to protect birds. There is no evidence of economic benefit (no exact figures)



of the project in the region, but the stakeholders believe (e.g. the representative of municipality), that there are more visits of tourists in the area, because of the project which could have positive economic effect on the economic activities in the region (e.g. restaurants). The project created a job opportunity, because CSO employs the project manager (half personal capacity), but a rest of potential job creation was not identified. Due to the size of the park and numbers of visitors, it can be assumed the overall creation of jobs is limited (source: workshop).

The educational value of the project is very high, the NGOs, CSO and CSOP, support that by promoting biodiversity values in region on number of occasions there (see previous section). Therefore, it could be assumed that the positive social benefits are created too. When pupils from schools in region learn about the traditional value of the ancient irrigation system supporting biodiversity together with the social/production benefits it represents clearly also social benefit (e.g. the young people could be proud of the cultural values in the region).

The stakeholders agreed that the project has also traditional/cultural value, because of restoring the ancient irrigation system.

One of the stakeholders explained, that the project has a value as a show case of sensitive landscape management based on renewal of habitats in the intensively farmed area (source: CSO).

3 Shifting societal norms, collective learning, and voluntary actions

The representatives of the CSO believe there is seen a shift in societal norms in the expected environmental or social behaviour from the farmers. The general reason is seen in the change of generations, but more because of a pressure from the public, and even more the influence of environmental experts, environmental NGOs, and representatives of state institutions in nature protection (source: interviews with the CSO, CSOP, municipality representatives).

Collective learning facilitated innovations in communication, because they came from the need to communicate with the stakeholders, to explain several biodiversity issues, and searching for compromises (source: representative CSO). It can be concluded, that these ways of communications and common issues facilitated searching for solutions.

The communication, exchange of views/values, and attitudes were carried out by seminars, personal meetings between stakeholders, public events (e.g. organised visits of the site with a guide), telephone calls (and SMSs). Different ways of the communication were used for different purposes, but at the same time they served to collective knowledge (source: interviews, workshops).

In addition, the board contributes to the publications of local periodical magazine. One of the CSO representatives believes the exchange of values could be supported in addition by a production of films/videos and possibly a creation of a specific broadcasted program for public (source: interviews).

The leading stakeholders in the exchange of views and collective learning are the CSO and CSOP. The representative of municipality reported, that she learned a lot about the environ-



ment and the ways how it could be protected/enhanced (source: PEGASUS workshop, interview). Some farmers block the exchange of views and collective learning, because do not agree with some features of the project (source: interviews). These farmers were not at the initial meetings, where the project was introduced (organised with the municipality Jaroměř in its building). Despite they were invited they did not come and even during PEGASUS surveys and workshops most of them refused to participate. Project manager contacted them regularly (e.g. announcing the date of the grassland irrigation), but despite relative general high trust to him, the participation of most of the farmers did not improve (source: interviews and workshops). There is only one farmer, who attends all the project board meetings. This person also participated on the PEGASUS workshops. Another one was open to one PEGASUS interview, but later refused even to answer to additional questions. Therefore, the level of participation of most of the farmers is low and it is assumed that also collective learning was limited to only those participating stakeholders. One of the barriers of the participation of farmers is uncertainty about the land ownership in future, which could influence their future income (CSO buys land from owners), and also not balanced sharing costs and benefits (source: interviews, workshop).

Initiation of the project

Threat of abandonment of previously wet and biodiversity rich meadows and irrigation system initiated the project idea. The threat motivated local ornithologist to consider creation of a private bird park by renewing the local former irrigation system to recreate wet meadows. This step was based on pure enthusiasm without business ideas behind. The initiators of the project started to communicate with the key stakeholders who could be influenced or could be important for success of the project idea (including the farmers) (source: interviews).

The project would happen even without policy support, but still the progress would be much slower (source: interviews). The initiative could be seen as a self-help project, while motivating general public to contribute by financial means and/or by actual work. The policies (financial policy tools) played significant role in speeding up the process because it was possible to rely on CAP support in the suitable grassland management and use investment supports for creation of pools and bird-watching facility.



Table 4: Changes in the project and their relation to policies

Changes or maintaining activities, which could be ceased	Due to drivers
Initiation of the project as whole	Danger of abandonment potentially (and in past) biodiversity rich habitat – no market incentives
Property rights change (purchase of the land by CSO)	Public support (public collection, donors' management) and low trust to farmers on agreement on the management in future
Maintenance of the grassland management	CAP support (without CAP difficult to maintain, additional effort needed to raise financial means)
Creation of the pools for amphibians	Investment support from policies of Ministry of Environment
Creation of the bird-watching facility	Investment support from policies of Ministry of Environment
Irrigation system renewal	Investment support from policies of Ministry of Environment
New institutions: rules of water management, agreements on grassland management with the farmers	Self-help
Higher level contracts under Agri-environmental-climatic Measure	Initiated by CSO, supported by CAP (small part of area)

Source: based on data from interviews

An important change in the leadership was employment of the project manager, who is an enthusiast, but also a local inhabitant, and most of the stakeholders trust him, including the farmers.

4 Mechanisms, (collective) actions and governance arrangements to enhance the level of ESBO provision

4.1 Organisational capacities, leadership, networking and communication

The Bird Park is a collective action, because several actors agreed on some rules for the same benefits (increase of biodiversity, education, and rescuing traditional values). The collective action and role of the actors are described in the chapters 2.2 and 2.3. The board takes the key decisions and coordinates activities and provides information on them to the relevant stakeholders. The CSO employs the project manager with the responsibility to take operational decisions and coordinate the collective action. The activities of CSO rely a lot on voluntary work and time spent. In the group the project manager is half time employed, but works more than half time job and in addition involves his family to the project activities (source: workshop). There is one retired voluntary working experienced person/a local member of the CSO (e.g. doing paper work, negotiating with the land owners). And the rest about two people take this project as additional effort to their regular work at the CSO (e.g. director and one employee).



CSOP, beside the role of being part of the board, carries out management of the site (e.g. cutting grass outside farmer's land) and helping with local knowledge to carry out small projects (e.g. pool creation).

The formal leader of the network is the director of CSO, but there is the project manager who oversees coordination of all key activities in the project under supervision of the board. He is the local enthusiast, who is employed by the project (half time). He is well known and accepted by all the key local stakeholders, because he is the local inhabitant. Concerning the action situation this person is actual leader of the collective action. The director of CSO seats in the capital of the country quite far from the project locality and therefore all the local stakeholders do not accept him so well (source: interviews).

When considering the key factors supporting collective action, it should be mentioned, that trust differs. It is quite high between CSO and donors, CSO and most of the stakeholders. But it is rather low between CSO and some farmers. The difference is also when assessing trust to CSO as an organisation (headquarters in Prague) and the local project manager. The trust is lower to CSO as an organisation, but quite high to the local project manager (for details see Camska, Sejnohova, Prazan 2016).

Characteristics and principles of collective action and action situation

The list of characteristics and principles of collective action is based on literature on the institutional analysis and collective action (Ostrom 1990, Ostrom 2005, Ostrom 2010)

The **number of the stakeholders** is rather low for a stable collective action. There are only six farmers, who manage the land, and only two of them have in the area more than 10 hectares of grass. None of them has these grasslands as the only source of income and most of them have the area in Bird Park only as a fraction of their total land area (two farmers have more than 50% of their total farm area in the Bird Park). The income generated on grassland in the case study area is not for all farmers the only and main income, therefore the dependency on this income is rather low.

For the **appropriation** of the resource unit it should be stressed, that the creation of wetland made the yield of hay more reliable. But in extremely dry season no water is available and the irrigation system does not help. On the other hand, there is an uncertainty concerning wet weather coming after an irrigation which could make the meadows too wet for usual farming operations.

The **monitoring activities** are rather easy. The project manager can easily check the area concerning irrigation and grassland management (source: interviews).

It is rather **easy to manage** the irrigation system and the project manager can rather easily measure availability of water in the river for the irrigation. Farmers use usual technologies for hay making (e.g. tractor driven technologies). Grassland is occasionally grazed by low number of animals (e.g. horses), (source: interviews, workshops).



Property rights: Farmers do their farming on a rented land to a large extent (both from CSO and from individual land owners). When farming land of the individual owners they have property rights associated with relevant rent contract and there are no severe limits for grassland management. The main limits are stated by the CAP (Cross-compliance and Greening, which means the ploughing of the grassland is not allowed on designated protected grasslands). The limits, caused by the project, could emerge when too wet weather comes in combination with previous irrigation. This could prevent farmers from collecting the hay. When farmers rent the land from CSO, then the property rights are limited and they usually have to agree with the management requirements of CSO (even the requirements are not too demanding). For some farmers, the land ownership in hands of CSO is a sensitive issue (source: interviews, workshops).

Sharing costs and benefits in the action situation (reciprocity)

The actors do not share costs and benefits evenly in the action situation. All the stakeholders appreciate positive change in the biodiversity and improved landscape management. For project leaders (CSO and CSOP) the benefits are the same or higher than costs (including salary of one part time employee coordinating operational issues under CSO). They invest their time, private financial resources (to a limited amount) and some of the involving partly also their families' time and work in the park management, but the project is their life long mission and they give to it the highest priority (source: outcome of the workshop with key stakeholders in 2017). On the other hand, the farmers as the key partners in the meadows management consider their costs exceeding the benefit (source: outcome of workshop, only one farmer present, other not willing to communicate, not in favor of the project). The costs and uncertainties are seen especially in a risk of losing hay, because of the irrigation in combination with a heavy rain, the need for more careful planning, some risks during the meadow/grasslands management activities (e.g. some pools are not visible in grass and tractors could fall to them, and it happened already), decreasing quality of hay (e.g. later cuts). Some of the risks are not high, but farmers should count with them, but perception of risk is based on actual events which already happened and farmers take them as their costs associated with the project (source: outcomes of the workshop).

The workshop showed that the leaders of the project were not so clearly aware of the actual sharing of costs and benefits between stakeholders (source: comments of the CSO representative after the workshop).

The level of the trust differs between the stakeholders: It is quite high between CSO and donors (many of them are biodiversity enthusiasts), CSO and most of the stakeholders. But it is rather low between CSO and some farmers. The difference is also when assessing trust to CSO as an organisation (headquarters in Prague) and the local project manager. The trust is lower to CSO as an organisation, but quite high to the local project manager (source: interviews). Because the area is small and the number of actors is low **the level of information** on the trustworthiness and cooperation is rather well known to stakeholders. The workshop showed that the level of reciprocity was not so well understood by the stakeholders. Also rules are rather well known to the relevant stakeholders (e.g. on water use, timing, grassland manage-



ment). This is ensured by the presence of the project manager, who makes sure all the relevant stakeholders are informed in due time. It is less systematic to spread the information on the cases of non-observation of the rules or agreements in the group. But it should be said, there are not many rules in concern and in case of breaking some promises this does not happen intentionally (source: interviews).

The actors can easily be **linked**; this is supported by the small project area, and low number of participants, and by current technologies of the communication (SMS, emails, personal visits of project manager).

The level of the coordination is described in the following section. But this is done in a simple way by the project manager and because the number of stakeholders is low, the coordination is not too demanding.

Regarding **the similarity of the interest**, there are two groups of the stakeholders. The board (CSO and CSOP), the fishers and hunters, a part of general public, bird enthusiasts, the small power plant owner, and the project donors, and volunteers have strong interest in the environment and landscape, biodiversity, and especially in the birds' population/species enhancement (despite different views on how it should be supported). On the other hand, there are the farmers, who seek an economic sustainability of their farming, and even they enjoy the biodiversity too, this interest is much lower, than their economic interest associated to the grasslands in the Bird Park. This point of view is valid even the grassland is not the main source of income for them (source: interviews, workshops).

Most of the actors have a **long-term interest** in the resource system, only few stakeholders regard some farmers as having only a short-term interest in the resource system (source: interviews).

The stakeholders did not identify a presence of a participant with **substantial leadership**, but the project manager (CSO) is appreciated for his enthusiasm, commitment, trustworthiness, and local knowledge (source: interviews).

Rules: Constitutional rules were expressed in the process of forming the board with the strategic decision making power. Only two NGOs formed the board (CSO and CSOP, both environmental NGOs) and other stakeholders were not involved. It shows that the pure environmental interest was preferred when forming the core of the collective action (source: interviews).

The project **operational rules** are partly formalised (e.g. a part of the water management regime approved by the municipality) and partly not (e.g. the agreement, that the farmers are announced on the actual time of irrigation, informal agreements on the grassland management). The key stakeholders considered the rules concerning water management and irrigation as working quite well (source: interviews, workshop) (source: interviews).

The operational rules are actually used and monitored. An enforcement of the operational rules other than of the water management is rather weak and is based on personal power of members of the board to express dissatisfaction to the stakeholder, who failed to observe the rule. The enforcement is carried out by the project manager and one very skilled volunteer



(an old member of CSO, who was a co-author of the idea of the project), both in behalf of CSO. The most frequent type of breaking the rules is not respecting the previous agreement on the grassland management or in a case of a competition for the land in the Bird Park (“a purchase race” between CSO and some farmers). The board does not use reporting wrong practices of the farmers to Paying Agency as a way of punishment, but there is such threat as an option. One of the reasons is the written agreements between the CSO and the farmers are not transparent enough, as indicated by the CSO representative (source: interviews). The operational rules do not contain way of punishment especially those, which are not formalised.

A specific set of the rules stem from the Agri-environmental-climatic Measure contracts, which are formal, monitored on a sample, and enforced. All prescriptions are well defined, from what should/should not be done, outcomes, and also a way and degree of a punishment in the case of non-compliance. Enforcement is carried out by Paying Agency and has rather good discouraging power (Prazan 2014). All in all, there is a combination of enforcement, by internal and external agents to the project.

The rules are rather well known between the stakeholders, but it is not clear to the stakeholders, how much the other stakeholders know the rules (source: interviews).

The key legislation is rather close to the working rules and makes a baseline to them (source: own assessment).

The **costs** of the action are personal (the employed project manager and partly the volunteers), capital (e.g. building of pools, bird observatory, facilities of the irrigation system), and opportunity costs – mostly for the farmers (e.g. more difficult planning, difficulties to manage the site, potential and partial loss of production). At the same time the production of hay is supported by the irrigation in dry seasons. The investment of these resources leads to production of not only hay, but first of all ESBOs (mainly biodiversity and cultural/educational values, see chapters above) (source: interviews).

The **information** on the management of the site and the outcomes is provided by the board of the Bird Park through different means. The farmers obtain the information by SMSs, personal communication with the project manager, seminars (on management of the site). For the donors, a site visits are organized, the donors also receive the regular leaflet with the information about the achievement on the site, and they are promoted on different meetings, seminars, and public days of the Bird Park. Moreover, the project website is used to show the achievements of the collective action (source: interviews).

A free rider problem was not recognised as the core group (board) is small and based on enthusiasm. In wider circle of the collective action the issue of free riders turns to issue of the control of compliance with the agreed rules.

The whole project and the collective action were started without the farmers. CSO and CSOP argue, that the farmers had been invited to the initial meeting, and they did not come. But also later the composition of the board did not give much space to the deeper involvement of the farmers (source: interviews, workshop).



Important is also **motivation** and especially the balance between internal and external motivation in the long-term contracts (Slangen et. al 2008), which is relevant for this case study. CSO/CSOP, donors, municipality, small water power plant owner, and hunters, are in case of ESBO provision motivated for actions mainly internally, but farmers are motivated mainly externally (CAP support and to a small extent also by market). This difference in motivation negatively influences also the capacity of the group of stakeholders for collective action, long term agreement, and partnership.

Collective action in wider context and potential development

Collective action was an innovation enabling institutional change by creating long term agreements and cooperation between stakeholders on production of ESBOs. The presence of the collective action is therefore a precondition of progress of the project, because it provided funds for the land purchase for the capital works, and gave the CSO ownership of the meadows, and thus higher control over the management of the grasslands (e.g. fund rising from the donors), (source: interviews). It can be concluded, that without the ownership of the land, it would not be possible to create pools for amphibians, and to improve substantially the habitats for waders.

There is a wide support of the collective action on the municipality level and also on the NUTS3 level. Some farmers managing the meadows do not support the project and this is a weak point of the collective action. They were not convinced from the very beginning of the project and no sufficient attention was paid to the costs they bear in context of the project. The strength is in the clear message of the project, it meets the demand of the number of local/regional biodiversity enthusiasts and the local population, the CSO created quite reputation and image concerning use of the collected funds, and also because well communicating the results of the project to the local population, and to donors (source: interviews, workshop). Clearly the lack of the trust (the general population level is rather low) did make it difficult to involve all the farmers to the project and low emphasise of the balance of costs/benefit sharing between stakeholders supported low trust even more (source: workshop).

The buying the land was carried out by the CSO as an alternative strategy to avoid lack of cooperation with the farmers in future and it already started process which creates for some farmers an uncertainty (great part of the land is rented by the farmers).

There were discussed some suggestions on the workshop, how the lack of trust could be overcome. First of all the CSO and CSOP could make an effort to attract additional compensations for the costs which are not covered by the current CAP. The reason is to improve the balance of sharing costs/benefit between the stakeholders. These two NGOs could organise small events with an attractive program (e.g. socialising with barbecue) in order to improve the relationships with some stakeholders. Also improved communication of the environmental effects of the project focused on the farmers and hunters could help. Another option is to decrease the uncertainty of farmers by a transparent communication of future plans of the CSO on the Bird Park (e.g. in land purchase, plans to decrease the damage of grass by visitors). Also the reputation of farmers who contribute to the Bird Park creation/management could be increased by the CSO/CSOP and the municipality (idea was supported by NGOs and the municipality), (source: workshop). But even the supportive farmer does not appreciate that offer,



because he does not see the benefit from having higher reputation in the region. One of the reasons could be, that large farms usually sell their commodities through wholesalers and do not care too much about their local reputation (source: workshop). Most of the possible improvements are in hands of the CSO and CSOP. We can conclude, that there is apparently lack of knowledge of the key principles of the collective action, and the social knowledge in society was lost during time 1948 - 1990 in the Czech Republic (the country was governed by the Communist party).

The strength of the collective action is that most of the stakeholders are enthusiasts capable to communicate the value they provide by the project, and therefore it is possible to raise financial means for some of the types of costs.

The weakness of the collective action is that it is difficult for stakeholders to collect financial resources for running the NGO itself (e.g. personal costs). There is a lack of policies in this respect and donors are more willing to support capital works than the personal costs. It means that in a long run it could happen the enthusiasm could be exhausted and the collective action could face substantial difficulty. Additional weakness is the lack of trust and cooperation with some of the farmers (source: interviews, workshops).

The last weakness is partly compensated by the on-going purchase of the land in order to get more control over the management of the area, and to avoid potential risk from a lack of cooperation. But there are ways how to improve share of the farmers on the benefits of the project by for example adding high level schemes (under Agri-environmental-climatic Measure), suitable for the site, and providing adequate payments (this could be initiated by the board). The CSO and CSOP could organise some targeted events to improve the trust and communication between the stakeholders (e.g. barbecues), or discuss the future plans of the CSO openly with stakeholders to decrease uncertainty (source: workshop).

Collective actions with the aim of the production of public goods (even together with private goods) are quite rare in the Czech Republic, and therefore it is difficult to say, whether there is another good example of such collective action (source: the first PEGASUS workshop on the national level).

4.2 Innovative governance arrangements and mechanisms supporting ESBO provision

The provision of ESBO in this case has from of collective action with private initiative. Important part of the case study is a system of property rights and their change. These could be distinguished according to Ostrom (2010) to four types: (i) access—the right to enter a specified property,⁴ (ii) withdrawal—the right to harvest specific products from a resource, (iii) management—the right to transform the resource and regulate internal use patterns, (iv) exclusion—the right to decide who will have access, withdrawal, or management rights, and (v) alienation—the right to lease or sell any of the other four rights.



Table 5: Overview of property rights according to actors

Stakeholder	Access	Withdrawal	Management	Exclusion	Allienation
Farmers	On rented (most) and owned land	On rented and own land	Limited rights (some use patterns)	Grasslands (difficult to enforce)	Own land
CSO	Own land To irrigation system	Own land Irrigation system Benefits from ESBO	On own land Irrigation system	Irrigation facility – enforcing difficult	Own land
Owners of the land – non-farmers	On owned land	No (possible after lease contract ceased)	NO (on leased land)	On their land – difficult to enforce	On owned land
Hunters	On grasslands	NO	NO	NO	NO
Fishers	To river facilities	Water body (river)	Water body (river)	Only authorised fishers	NO
Municipality	Water body Irrigation system	NO	NO	NO	NO

Source: own assessment based on results of interviews

At the beginning of the project CSO did not have any property rights in area and the governance and institutional change was possible after the property rights change (result of the change is presented in Table 5). The ownership of part of grasslands in hands of CSO enabled to start contracts with farmers with higher power over the grassland management, but it created uncertainty on farmers' site and thus weaken the collective action.

Important new institution is a formal water use regime which reflects and respects property rights of other stakeholders (especially small water power plant owner and farmers). This has a form of officially approved set of rules for water management.

The most of the farmers have contracts with government on the management of grasslands. Prescriptions on management are part of contract in a framework of AECM (and less targeted measures under direct payments), which provides a governance structure for the way the management of grassland is carried out.

Farmers have medium to short term rent contracts with owners on the land management (most of the land is rented). Now they rent part of the land from CSO and the contract is rather weak (very low rent and the conditions are not demanding). The only condition agreed on the grassland management is postponing grass cut to support biodiversity. So the contract does not represent a burden to farmers (source: interviews, workshop).

The collective action is not formalised by written agreement, the only exception is water regime document, of which approval is required by law. It has form of relational contract based



on trust and in case of board, and relationship of board with most of other stakeholders it is rather stable, but it is quite weak with stakeholders with low trust level to the project leaders (i.e. farmers). The effort of CSO to keep the relationship right with other stakeholders is significant, but sometime CSO/CSOP does not respect some of the principles of collective action. The CSO put a lot of effort in providing experience of the benefits of the project to donors (e.g. well showing the result in the ESBO provision, invitations to public days) in order to keep principles of reciprocity and support long term relationship with them.

There is rather flexible management of the Bird Park and coordination of collective action. The CSO and CSOP run the board which meets twice a year, communicates by emails and telephone calls with each other, and with other stakeholders. The board makes strategic decisions. The head of CSO has a decision-making power and delegate operational decisions to local project manager. The same arrangement was from the beginning of the project and it was not necessary to change that (this is regarded by key actors as successful). The only change was hiring of the local project manager after some time of the project in order to make easier the actual management of the project, and to enhance close contact with local stakeholders (source: interviews, workshop). The new project manager was the major change in the project management.

There are only two levels of management (director and project manager), and the mechanism of communication (meetings, emails and telephone communication). The flexible work of board is possible because there is a sufficient level of trust between both NGOs and all of the NGOs members are enthusiasts, sharing common interest and benefits of the project (CSO and CSOP) (source: interviews).

The difficult part of the management is that the project work is quite demanding and there is not sufficient personnel capacity to face that challenge (source: interviews).

The leaders of the project believe the governance model and management is transferable, because it is a simple and flexible model, and it is suitable to the purpose (source: interviews). But the property rights structure is rather specific and even in principle transferable, the potential for spreading this model is limited. The reason is the long-term limits in sustainability and high costs associated with land purchase. The situation when the land is owned by of NGO has an implication of high external dependence on financial support (of grassland management), which could make the initiative fragile in times of significant change (e.g. decline in support under CAP, decline in national economy). The option would be if the CSO/CSOP find alternative sources of financial support for the initiative.

The enhancement of biodiversity (the key ESBO) is the first priority for the board and it substantially influences the governance. The project manager was selected from local inhabitants, so he has an advantage of the local knowledge and participation in the local social networks. But he is also professionally (i.e. science and specially ornithology) skilled. The leaders have to make sure to find a right balance between biodiversity and educational purpose of the project, because the activities for visitors in the site should not limit the biodiversity improvement (source: interviews, workshop).



The project is supported on the regional level, especially the municipality (environmental department) put a lot of effort in support, and also regional government is supportive. Some farmers are supportive, but some of them not (source: interviews).

The nearest steps in enhancement of ESBO provision are: measures for wildlife support (creation of a new wetland for birds and bird-watching, creation of pools, and areas without a plant cover for waders, insects, and amphibians). The new activities for visitors will be an advertisement, creation of visitors' infrastructure (e.g. educational leaflets and brochures, a path with educational boards, a bird-observatory), (source: interviews). The board plan to start management of their land in the site themselves (most probably by CSOP) to make sure the proper management will be in place.

4.3 The role and impact of policy in ESBO provision

The case study area represents 70 ha of grasslands in the lowland fertile arable land area and the Bird Park is not recognised as protected area (private park). These conditions determine also type of policies which are relevant for the case study. The area is not less favoured and not lagging behind in development.

The provision of ESBO is linked to grasslands in this case study. The most of the grass is used mostly for beef/sheep production nowadays in Czech Republic. But given poor economic performance of beef/sheep production, the provision of ESBO on grassland is driven more by supporting policy measures than by market.

The most influential are the CAP (Direct Payments under the Pillar 1 and AECM under the Pillar 2) and policies of the Ministry of Environment (Operational programs/national schemes). The regulatory framework is based on the Birds and Habitat Directives especially in Natura 2000 sites and the Czech Law on Nature Protection No. 114/1992 Col. Without influence of the mentioned policies, the part of the land could be abandoned.



Table 6: Policies linked to ESBO provision (biodiversity, cultural values, and public education)

Policy type	EU	CZ	Payments (€/ha)
Institutional framework	-	Support in institutional change from municipality/regional government	-
Regulatory framework	Cross-compliance (SMR), especially Habitat and Birds Directives	Law on Nature and landscape protection 114/1992 Coll.	-
Voluntary conditionality of CAP	EU rules on cross-compliance and greening	Detailed guidelines to comply with cross-compliance and greening	-
Supporting measures (area payments)	Rules for Rural Development Plan design	Agri-environmental-climatic measure (extensive grassland management support)	100-111
Investment support	Rules for Operational Programmes	Operational Program for Environment	Project based (e.g. pools and visitors facilities creation)
Supporting measures – indirect influence	Direct payments rules	Detailed rules and level of payment	201*

*) Including greening. Voluntary coupled payments are linked to LU of dairy cows, ruminants, and beef and not directly linked to area. If linked to area the payment could range from 2-55 €/ha.

Operational Programme for Environment was key source of investment support directly aimed at biodiversity provision, water retention, and education of visitors (e.g. facilities for visitors). New habitats were created (e.g. small pools), investments helped to restore irrigation system, and together contributed highly to the increase of ESBO.

Very important were policies of regional government (Region Hradec Králové) – meso-level - and the city of Jaroměř. Both were active in provision of administrative support and creating necessary new rules – like adjustments of Development Plan of City Jaroměř or design and approval of water management regime. Their assistance has made the collective action easier by its promotion (e.g. provided their facilities for meeting) and by help in institutional change. The farmers are motivated to manage the grasslands by market in limited way, but more by support of grassland management under CAP, and some of them also feel obligation to owners



to take care of their land (source: LPIS, interviews). Partly direct payments with cross-compliance/greening, but mainly agri-environmental-climatic measure, contribute to the extensive grassland management (e.g. limiting application of fertilisers). Thus, CAP tools contribute to ESBO provision.

The main source of information provision to farmers on grassland management is ensured by the local NGOs and the project manager (source: interviews). The ESBO provision is not linked to any private scheme and market influence is very weak, because the beef production is in a loss.

The main change in the policy was an introduction of the Greening which replaced GAEC standards in prevention of grassland ploughing (the protection is actually weaker now). But the policy change actually did not influence the ESBO provision in the project. When the policies were introduced, the meadows were already degraded, and of a low biodiversity value. Therefore, the grasslands were originally addressed by not targeted scheme (i.e. support of extensive grassland management). But after the restoration of the irrigation system and wet meadows, waders came back, and the locality started to be valuable from the biodiversity point of view. Therefore, in the later stages of the project it was possible to designate a part of the area for high level schemes of AECM, but there is still some potential to increase the targeting (e.g. designation for corncrake protection). A significant policy failure was not identified there (source: interviews).

Because there has been no radical change in the relevant policies during the last 10 years, it is not anticipated any significant difference in ESBO provision caused by such change in this period. But without policies which originated before 13 years (i.e. the EU accession and the start of Agri-environmental Measure) the provision of ESBO would be much more difficult (as indicated above) (source: interviews).

The policies influencing the Bird Park management did not contribute to the collective action which was necessary for the ESBO provision, but supported basic grassland management. The CSO and CSOP helped the farmers in finding the right scheme under AECM and they also initiated designation of a high-level scheme in the area (i.e. suggested that to Ministry of Agriculture).

The current policies are rather coherent and complement the other activities. Some synergy could be seen between the support of education and the investment support of creation of pools. There was found a gap in the institutional framework for such an initiative, because the Czech regulatory framework does not recognise currently private parks for the nature protection, and therefore the private Bird Park does not benefit full support as the national protected areas do.

The aims of the Bird Park are partly in line with the aims of CAP policies (measures under RDP) and therefore the policies worked rather well here.



All in all, both the national (the support of investments in the Bird Park) and EU (AECM and Operational program) policy measures worked rather well and have been effective in facilitating ESBO provision in the Bird Park. Both types of policy were complementary in targeting the relevant activities. Some innovation in the policy was in tailoring of AECM for example relevant to the Bird Park and in the time period discussed. Policies were less targeted to support the collective action and more to individuals, who operate in the area.

Stakeholders in collective action integrated the policies to the project development and regard them as an important factor in the ESBO provision.

4.4 The role of the private sector in ESBO provision and enabling factors

The provision of ESBOs is partly independent of the private sector. It means the ESBOs are provided on the land owned by CSO and enhanced by irrigation again in the hands of CSO. On the farm-land not owned by CSO the local farmers provide ESBOs based on agreement with CSO on management and motivated by the CAP payments (the market is not important driver here, because the hay market in the region is small, and with high uncertainty). The ESBO is not provided in a framework of any private scheme in this Bird Park and it is not a private sector initiative. Because the market is a weak driver here, the other actors in market chain are not relevant here (beside the farmers). The key actors reported, that there is no prospect for private sector initiative or private scheme (source: interviews).

5 Potential pathways towards an enhanced provision of ESBOs

There has been already a discussion carried out between the members of the board how to enhance ESBO provision. Some proposals for the grassland management improvements and introduction of new pools, and small ponds were introduced. The target is to increase the number of the wader species nesting in the area up to three or four. In the case of amphibians, the number could increase only by one, maximum two species, because there are not more species in the area.

Due to the fact, that the size of the area is a major limit (70 hectares in total), the idea to enlarge the Bird Park has been already discussed, but it unlikely happens in near future (in surrounding only arable land is available). The other reason is that even current size is difficult to manage, because there is a lack of human capacity in CSO and lack of funds to pay additional human work (source: interviews).

In the case of provision of educational, amenity, and recreational values for public, there is still some space for increase of the provision. CSO and CSOP plan to divide the area to zones: for visitors, buffer, and zone only for birds. The plan could secure low disturbance of the birds and easier management for the birds' protection by the CSO staff. On the other hand there is still a need to build some facilities (e.g. for bird-watching). In general the CSO seeks the right balance between number of visitors and the caring capacity of the site. There is still space for increase especially a number of individual visitors. Group visits are usually organised in around six actions per year and this number could not be increased substantially (the reasons: e.g. difficult to manage it, limited capacities of volunteers as a guide, caring capacity for a large



number of the people). The target number of visitors in ten years' time is about 1000 visitors per year. This will be also influenced by funds available to schools for organising the visits (e.g. travel costs) and for paying the fee for one pupil in the group (source: interviews).

The provision of ESBOs will be secured in future by a successful continuation of the land purchase (financial contributions of donors are increasing currently) which gives to CSO full property rights, and power to pursue the proper management, and to decrease a risk of disagreement with the farmers on the grassland management (source: interview, workshop). The project target is $\frac{3}{4}$ of all the Bird Park land in hands of CSO in future. The limits are also in willingness of the owners to sell the land. Therefore, there is an intensive discussion with the owners over the future ownership lead by the CSO (source: interviews).

Also the availability of a sufficient amount of water is limiting, it means in some seasons there is not enough water for all users (especially in dry years like 2014-2015) and it is time consuming to change the rules of the water use, which should be approved by officials at the municipality (source: interviews).

All in all in order to enhance provision of ESBOs, the board of the Bird Park deals intensively with the land owners on the further land purchase, considering an increase of the total area of the Bird Park, but in long run. The CSO will put further effort in creating new habitats for birds and amphibians to support them and to increase the numbers of wildlife.

There is no additional collective action, only which is described in the sections above.

The Bird Park board makes strong effort to diminish the role of the farmers operating on the land which is not owned by CSO. Therefore it is assumed that in future the property rights change substantially, because the farmers will rent the land from CSO and their management activities will be more under control of the CSO (the NGOs are considering to manage the site at least partly themselves in future). It means the private sector will be probably weaker in the Bird Park.

6 Suitability of the SES framework and 'action-orientated approach' in the analysis of ESBO provision

The SES framework was very effective in taking into account both ecological and social aspects, because in order to assess its performance it was not possible to avoid all the key variables, explaining the performance (the SES methodology and the history of development of this concept provided the set of variables needed).

For this case study the SES framework was not adapted much. It was necessary to consider that actors, who use the resource units, are not fully dependent on the production and that the production is not economically viable. It means that this context influenced the motivations and interest of the actors, and the strength of some rules in place.

Without SES approach it would be easy to overlook especially the role of social dimension (e.g. characteristics of the actors, a level of the trust, a sense of the history) in the assessment of



success/failure of the collective action, and thus also the provision of ESBO. It is because the actors are likely to be perceived as rational people, who are driven mainly by economic incentives to their decisions, and do not take into account benefits of common actions, additional benefit stemming from them or on the other hand seemingly irrational reasons for their decisions (e.g. based on low trust).

SES helps to understand additional factors, when analysing farming systems or policy influence to farming systems. Especially in the case when more actors are involved. These are especially characteristics of the subject of the transaction (here the hay and relevant ESBOs), the actors, and the whole dynamic of their interactions, which should be consistent with the characteristics of the good under the transaction. Also a deep insight to the group dynamics concerning their exchange of the information on the trustworthiness, on the level of the compliance control of the agreed rules, the way how the actors are penalised in case of noncompliance to the agreed rules, and a lot more help to see, what factors should be changed in order to make collective action improved or even possible.

Because the SES helps to include all key factors to the assessment, it could be called a holistic approach.

When the SES approach takes past path dependency or history of the system into account, it is possible to assess influence of dynamic change under the complex initiatives as collective action.

The SES can provide quite deep insight into role of principles of collective action which help in decision making aimed at increase and sustainability of the ESBO provision (e.g. how to increase trust, how to make balance in costs/benefit sharing between stakeholders, how to improve coordination). Decision making could be done both on the collective action level and on a national policy level (creation of institutional framework).

SES approach can discover deficiencies in the cooperation of stakeholders and thus also be a basis for suggestions for their improvements (e.g. early involvement of all key stakeholders, ensuring fair distribution of information). SES shows the value and impact of information sharing, common decision making, and other factors of good cooperation.

The SES approach should include also stakeholders, who are or could be beneficiaries of the collective action and ESBO provision, and for example the enquiry about the sharing of costs and benefits lead researcher/project managers to assessment of the valorisation of the ESBO at least in a qualitative way. Assessment in a quantitative way is not necessary outcome of SES application.

Using the SES approach showed that precise definition of a system and its boundary, and using participatory approach during the initiation of collective action in order to meet its basic principles and principles of institutional change gives good basis for the stakeholders' engagement. For example systems and institutional analysis is a good start, followed by ensuring of reciprocity during the coordination of the collective action.



For the most stakeholders the notions of public goods or ecosystem services are too abstract terms/concepts. In order to operationalise the approach these should be translated to the terms which are closer to their day to day life (e.g. support the birds and amphibians, and joy of people from nice environment – instead of public goods). The same effort should be made in case of lot of variables used in SES analysis and proposals for change.

A better management of the collective and common pool resource was the motivation for development of SES system approach, and therefore they are important for the understanding the approach.

The attempts to find solutions to identified barriers of ESBO provision with stakeholders are good tests of the SES approach in face of the capacity of system in question to overcome them. For example: SES approach identifies a low trust as a barrier to collective action and with the stakeholders are proposed actions for overcoming of the barrier. Then the system (coordinators, actors) shows its capacity to introduce such a change. It gives a lesson about the capacity of the system for institutional change and also about the quality of SES assessment and this is quite new knowledge to both actors and also to facilitators of the case.

It is unavoidable to be involved in the process and to influence that. Therefore, action research needs independent approach to all stakeholders in order to gain trust, needs careful self-reflection on the influence of the process, and also a need to avoid manipulative behaviour.

The SES approach studies cooperation of stakeholders in a complex environment and interactions, and both analysis of the system, and action research build on natural tendency of people to overcome “rational egoist” approach in the community if all key conditions are met. One of the conditions is at least minimum social capital (e.g. trust) allowing to bring stakeholders together and build the trust even more. But in CEE countries the trust between some groups of stakeholders could be so low, that it could be difficult even to bring them to the table to speak each other and to motivate them to come to the meetings more than one time. It is possible but it could be difficult and could need much more time and experienced coordination than in countries with more mature social capital (most of the EU 15). In this case sometime “start small” could be good concept, because people could be too quickly discouraged by seemingly no change for a long time.

In this case as an innovation could be seen a focus on the learning of collective action coordinators about the social dimension of the SES in a participative way. This allowed them to accept different views while avoiding severe conflicts with other stakeholders. This was taken as a starting point to future potential change in approach in collective action. Finally the experience from the workshop was appreciated by project manager as useful for his further work with stakeholders. So the innovation was an adjustment of the approach and ambitions to the local social and institutional environment.



7 Main conclusions derived from the Steps 3-4 analysis

7.1 Key findings on the particular SES and the provision of ESBOs

The case study represents relatively small area and number of stakeholders based rather close to the wet meadows. The studied SES provided much more ESBO after the collective action was initiated and several actions were carried out because of that. The leaders of the collective action succeeded to meet the local/regional demand of especially biodiversity/landscape enthusiasts and it provided sufficient financial funds for the investment in the site. The collective action helped to renew the traditional values and supported the environmental education in the region.

The policy measures played an important role and the collective action leaders orchestrated their support to create especially new habitats, facilities for visitors, and to renew the old irrigation system of a high cultural value.

If there was no demand for biodiversity in the intensively farmed regions between inhabitants and biodiversity enthusiasts, it would be difficult (if possible) to carry out most of the capital work, which was possible to carry out only on own land (e.g. habitats for birds like pools or wetlands). But it was necessary to address this demand, to gain the trust in the project, and the relevant actors to turn the demand to actual support. The demand is growing and will be supported further by a targeted promotion of the activities and events in the site, and especially of the results – provision of ESBOs to the inhabitants, school children, and biodiversity enthusiasts (e.g. additional organised visits, new facilities for bird watching, better presentation of actual achievements related to support).

Evolution of the provision of ESBO in SES shows that there was an attempt to run collective action which was partly successful. The core group represent only two NGOs (CSO and CSOP) and does not include especially farmers, but other stakeholders too (e.g. fishers, hunters, small power plant owner). They are part of broader circle of the collective action. It means they are less involved, usually do not participate on decision making, but are informed and asked for opinion. There were attempts to include farmers more, but it was successful only partly (with only one or two farmers). One of the barriers of inclusion of the farmers is quite low general trust (Uslander 2003, Uslander 2002, Frane 2006). The low involvement of farmers and uncertainty concerning future decisions of CSO (e.g. on land ownership) contributed also to a low trust to CSO and CSOP. Another reason is that distribution of costs and benefit of the action situation was not sufficiently discussed and managed. Farmers feel that they bear more costs than benefits.

The agreement on rules, their monitoring, and enforcement are rather well working, because the group of stakeholders and the site is small. Some rules are not formalised and their role is pursued by local quite respected project manager.

The small size of area and low number of stakeholders make it easier to board and project manager to spread information to all stakeholders (including personal communication), and



also coordination of the collective action is quite easy because that. Therefore, there is not felt lack of information.

The interesting finding is that in this case study the project leaders facing lack of trust to the key stakeholders decided to radically change property rights to land (NGO started to purchase the land) to ensure the ESBOs provision, rather than trying to build the trust and make a long-term agreement on the needed management of the site with stakeholders. The decision was made after the attempts to improve the trust level, which were not successful with some farmers. The project leaders started to consider a possibility to farm by themselves (not even renting the land to farmers), and now discuss all relevant advantages and disadvantages of that idea. Both the purchase of the land of interest and intention to start farming on their own can be seen also in other environmental NGOs (land trusts) and it is parallel to the long-term strategy of the state nature protection authorities in the Czech Republic. The reason were a combination of generally low trust in society and not sufficient experience in running collective action (i.e. some principles of collective action were not met).

When considering the other case studies under PEGASUS project it could be concluded following:

The successful collective action:

1. Involving key stakeholders in core group,
2. Keeping the key property rights the same (rules rely on agreement on collective action),
3. Providing ESBOs, should meet following conditions:
 - a) There should be actual or potential demand for the ESBO in society.
 - b) Sufficient social capital in the system allowing start collective action (i.e. agreed and used rules of collective work for the same benefit)
 - c) There should be an agent (individual/organisation): 1. with capacity, knowledge, and leadership to initiate/run the collective action (e.g. meeting the principles of collective action) and 2. Capable to meet the actual/potential demand for ESBO in society.

If there is demand for ESBO, but either the capacity of the initiator of the collective action is not sufficient, or the barriers for collective action are substantial (e.g. too low social capital), then the second-best option could be radical change in property rights (e.g. buying the land). Such solution can secure provision of ESBO even with risk of collective action collapse.

7.2 Key findings on governance arrangements and institutional frameworks

There have been substantial changes in property rights in the project (e.g. change in land ownership, formal water management regime). Land purchase was the second-best solution in order to make sure the ESBO will be provided in future under conditions of lack of trust between project leaders and farmers. The contract between farmers and government is a governance structure of the grassland management on most of the area. The agreements under



the collective action enabled stakeholders to change environmental conditions on the site and increase biodiversity level.

This case is not strongly dependent on the policy measures, despite the leaders of the project used the public funds extensively. The capital supports (under the Operational Program of the Ministry of Environment) were quite suitable for the site and did not need specific enabling factors (not necessary to tailor them), but just the project oriented leaders of the collective action were needed.

The area payments under CAP were slightly adapted. High level scheme of AECM was introduced there to reflect better the value of the site. The AECM support was positive factor which has made the provision of ESBO easier from financial point of view. The designation of the site for high level scheme under AECM (the only change in contract of farmers with government) improved to some extent farmers benefits from contributing to conservation and increased tailoring of the policy. The financial rules for NGOs are one of the obstacles of the economic sustainability of NGOs, which was recognised as a gap in the policy. If no financial support of the project was available, the project leaders believe, they can run the project, but the evolution of the project would be much slower and would rely mostly on donors.

All in all the policy was to a large degree in favour of the project and was utilised to a large extent. There is still some space for designation of additional fields for high level scheme and thus the policy could be better tailored and farmers more rewarded for their effort.

The weaknesses of the governance arrangements are following:

The Czech regulatory framework does not recognise private nature parks and therefore these do not benefit from usual regimes for similar localities (e.g. protection, support). The financial rules for NGOs are one of the obstacles of economic sustainability of NGOs, which was recognised as a gap in policy framework for the project.

The substantial change in the property rights during the last five years: caused higher stability of provision of ESBOs, but long term has made the project more fragile concerning dependence on external financial resources.

The management on the collective action level is rather flexible and the size of project allows quite simple distribution of responsibility which is based on the trust involving two NGOs. The leading NGO represents director with decision making power and project manager who has operational decision making power and implements the agreed actions by the board and at CSO.

7.3 Other enabling or limiting factors

Quite important factor in this case study is enthusiasm of members of the leading NGOs and volunteers. This is strong feature of the case, but could be seen long term as a weakness, because the work is quite demanding, not sufficiently paid, and in case of any radical change



in personnel (e.g. leaving, retirement), this could cause difficulties for the initiative. Contributions to EU strategic objectives.

The initiative contributes to local/regional tourism, but because small scale the real contribution is not measurable yet. The project contributes to employment to a small extent. The Bird Park represents a visible and inspiring contribution to sustainable management of resources (e.g. water, biodiversity). In Czech conditions the initiative is innovative as a community initiative involving to some extent stakeholders, because this is still rather rare when aimed at biodiversity (and in general too).

7.4 How about the transferability of the approach/mechanism used?

The leaders of the project believe the case is transferable, provided there is sufficient enthusiasm. It should be added that a lot of effort is needed in such cases to overcome for example lack of trust and not mature social capital in general. The approach is suitable to a small-scale project. In case larger areas and more stakeholders, the governance, rules enforcement and coordination of the collective action should be adjusted accordingly. It is advisable to try to avoid some weak points of collective actions, which could emerge in other cases in the Czech Republic (e.g. stemming from not mature social capital as a barrier for collective action).

The case is an example of securing ESBO provision with help of radical change of property rights (buying the land by project leaders) as the second-best solution when cooperation is not trusted from project leaders. This is a limit of transferability of the specific arrangements in the case, because this option is limited to specific cases, and usually prohibitively expensive for large areas.

On the other hand, the lessons from the project are highly transferable. Especially systematic implementation of principles of collective action are needed and this case study shows the weakness of collective action, in case this condition is not met. The case also demonstrates implications of not complete involvement of stakeholders to collective action. As a response, some property right changes could lead to lower sustainability of ESBO provision long run and high dependence on external funds.



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9 ANNEX: Reflections on the case study methodology used

This section focusses on the action mandate and its implementation by the research teams. It provides an overview of the participatory process, and its outcomes. It has to be discussed with the actors whether and in which format this section can become published. It has to be available internally for the comparative analysis but could be removed before publication.

9.1 Objectives and activities undertaken with initiative/stakeholders

Agreed objectives and implemented actions

In early stage of the project following objectives were collected from stakeholders:

- a) To help with finding a balance between the extensivity of farming and its economics, and demonstrating it to the farmers, and the ornithologists (source: the farmers).
Finally the leaders of the collective action tried to get data on economics on farms, but it failed because farmers did not provided. The purpose of that objective was covered to a great extent by quite deep discussion of distribution of costs and benefits between stakeholders, where **costs of farming were discussed** (even in qualitative way).
- b) Demonstrate the complexity and research potential to the decision makers on the national level and representative of universities (source: the ornithologists).
This objective was covered to some extent by **national level workshop** on findings and research in the case study area at the end of 2016.
- c) Potential for improvement of water management agreement, but the condition is to start measuring of the water use (source: focus group).
At the second workshop it was clarified that the water management works rather well, and the issue of measurement is no central to the case study, and is more of interest of hydro-power plant owner and the municipality.
- d) Members of NGO are keen to work more on finding of good communication with other stakeholders in order to improve collective action (source: focus group).

It means the last objective was the most important for the case study further development and was the main focus of the next workshop and discussions.



Actors involved

Actors involved	Their role
CSO and CSOP (several members)	Provided information on the site, ESBO provision and variables of SES in interviews. Actively cooperated in workshop preparation and organisation, active participation on workshops. Gave feedback to the results. Active discussion of possible actions in future. Were keen in results for potential implementation. Appreciated the discussed actions and expressed need to take them into account in future coordination of collective action.
Farmers	Some open for interviews (some refused). One actively participated on workshops, gave feedback to results of SES analysis and discussed the proposals for actions for SES improvement.
Owner of hydro-power plant	Provided information in interviews. Participated on the workshop and discussed potential future actions.
Representative of municipality	Provide information and actively participated on workshop and discussed potential actions
Fisher	Discussed potential actions at the workshop.
Volunteer	Provided information in interviews. Actively participated at the workshops and discussed potential actions for the collective action improvement.
Water authority	Provision of information and interview provision.
Nature conservation agency – regional office	Provision of information and interview provision.

9.2 Outcomes and further steps

Outcomes of the process:

- records of interviews and workshops;
- results of analysis of SES with feedback (approval) from group of stakeholders.
- Set of proposed actions/approaches discussed at the workshop with feedback and expression of usefulness for further collective action and cooperation of stakeholders.
- Deeper insight to the distribution of costs and benefits between stakeholders gained during the workshop – assessment of project team.

Further steps:

Board (CSO and CSOP) and on operational level mainly coordinator commented the results will be implemented to improve coordination of the collective action.

9.3 Judgement on the process

Expectations of actors:

The expectations of actors were mainly in decrease of uncertainties regarding the future development of the project.



Expectations met?

The expectation was possible to meet partly. The obstacle was partly low motivation of some stakeholders to participate on the process (especially farmers). Partly lack of capacity of project team to elaborate more some actions proposals with stakeholders (e.g. strategy for improvement of human resources and financial sustainability of the project).

The added value of participatory approach – opinion of project team:

In our view, the stakeholders could under the independent facilitation learn about issues which could be otherwise too sensitive and partly hidden. For example they could experience the distribution of costs and benefits of the collective action between stakeholders in a “safe environment” and get the feeling where are potential for improvement while avoiding serious conflicts. The team assume that the experience gained by the core group of stakeholders, who coordinate collective action, could help to improve the collective action to some extent.

Lessons and what did not work well:

The phase of discussion of potential actions for collective action improvement needs sufficient time (which was not available). In environment of low trust the willingness to participate on workshops and even interviews decreased after repeated invitations quickly (usually those with low trust and low benefit from the project/collective action).

It was not possible to overcome the low trust and to increase participation in case of stakeholders, who refused to communicate with the research team (mostly farmers). Therefore, the main lesson was available for those stakeholders, who attended the workshops. i.e. those who benefit from the collective action most.

9.4 Supporting data and statistics

The supporting data is in text in sections above.

